



ATTORNEYS AT LAW



Robert Greene Stern*
Edward J. Kessler
Jorge A. Goldstein
David K.S. Comwell
Robert W. Esmond
Tracy-Gena G. Durkin
Michael A. Cimbalia
Michael B. Ray
Robert E. Sokohl
Eric K. Steffe
Michael Q. Lee
Steven R. Ludwig
John M. Covert
Linda E. Alcom
Robert C. McConig
Donald J. Featherstone
Lawrence B. Bugajsky
Michael V. Messinger
Judith U. Kim

Timothy J. Shea, Jr.
Patrick E. Garrett
Jeffrey T. Harvey
Heidi L. Kraus
Albert L. Ferro*
David R. Benowitz
Peter A. Jackman
Teresa U. Medier
Jeffrey S. Weaver
Kendrick P. Patterson
Vincent L. Capuano
Eldera E. Son Floyd
Thomas C. Flala
Brian J. Del Buono
Virginia Lee Beaston
Theodore A. Wood
Elizabeth J. Heanes
Joseph S. Ostroff
Frank R. Cottingham

Christine M. Uhler
Ree Lynn P. Guest
George S. Berdmesser
Daniel A. Klein*
Jason D. Eisenberg
Michael D. Specht
Andrea J. Kemaga
Tracy L. Mular*
Jon E. Wright
LuAnne M. DeSantis
Ann E. Summerfield
Art W. Ledford*
Helene C. Carlson
Cynthia M. Bouchez
Timothy A. Doyle*
Gaby L. Longsworth
Lori A. Gordon*
Nicole D. Dietar
Ted J. Ebersole

April C. Ivor*
Laura A. Vogel
Michael J. Zancuso
Bryan S. Vida
Aaron L. Schwartz
Matthew E. Kelly*
Nicole R. Kramer

Registered Patent Agents*

Karen R. Mszkowicz
Nancy J. Leith
Matthew J. Dowd
Aaron L. Schwartz
Katrina Yulian Pei Quach
Bryan L. Skelton
Robert A. Schwartzman
Teresa A. Colclla
Jeffrey S. Lundgren
Victoria S. Rutherford

Michelle K. Holubek
Simon J. Elliott
Alicia A. Heidler
Mia Mutharika
Scott M. Wadhouse
Michael G. Penn
Christopher J. Welsh
Peter A. Soczunas

Of Counsel
Kenneth C. Bass II
Evan R. Smith
Marvin C. Guthrie

*Admitted only in Maryland
*Admitted only in Virginia
•Practice Limited to
Federal Agencies

January 10, 2005

WRITER'S DIRECT NUMBER:
(202) 772-8831

INTERNET ADDRESS:
JWEAVER@SKGF.COM

Art Unit 2631

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Re: U.S. Utility Patent Application
Application No. 09/986,764; Filed: November 9, 2001
For: **Method and Apparatus for Reducing DC Offsets in a Communication System**
Inventors: RAWLINS *et al.*
Our Ref: 1744.1330000

Sir:

Transmitted herewith for appropriate action are the following documents:

1. PTO Fee Transmittal Form (PTO/SB/17);
2. Fourth Supplemental Information Disclosure Statement;
3. A listing of the cited documents on Form PTO-1449 (4 pages);
4. Copy of the cited document (AP59);
5. One (1) return postcard; and
6. Credit Card Payment Form (PTO-2038) in the amount of \$180.00 to cover the Information Disclosure Statement Fee.

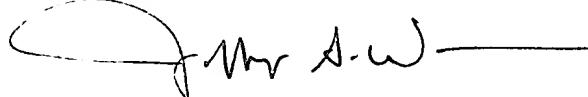
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents
January 10, 2005
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey S. Weaver
Attorney for Applicants
Registration No. 45,608

MQL/JSW:apg
Enclosures

352477_1.DOC



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Equivalent to Form
PTO/SB/17 (12-04)

Approved for use through 07/31/2006.

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2005

Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)
180.00

Complete if Known

Application Number	09/986,764
Filing Date	November 9, 2001
First Named Inventor	Gregory S. RAWLINS
Examiner Name	Vo, Don Nguyen
Art Unit	2631
Attorney Docket No.	1744.1330000

METHOD OF PAYMENT (check all that apply)

Check Credit Card Money Order None Other (please identify): _____

Deposit Account Deposit Account Number: 19-0036 Deposit Account Name: Sterne, Kessler, Goldstein & Fox P.L.L.C.

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

Charge fee(s) indicated below Charge fee(s) indicated below, except for the filing fee

Charge any additional fee(s) or underpayments of fee(s) Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity	Fee (\$)	Small Entity	Fee (\$)	Small Entity	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description

Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent

Small Entity
Fee (\$) Fee (\$)

50 25

Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent

200 100

Multiple dependent claims

360 180

Total Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Multiple Dependent Claims	Fee (\$)	Fee Paid (\$)
- 20 or HP	= _____	x _____	= _____			

HP = highest number of total claims paid for, if greater than 20

Indep. Claims	Extra Claims	Fee (\$)	Fee Paid (\$)	Fee (\$)	Fee Paid (\$)
- 3 or HP	= _____	x _____	= _____		

HP = highest number of independent claims paid for, if greater than 3

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____	- 100 = _____	/ 50 = _____ (round up to a whole number)	x _____	= _____

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other: Submission of Information Disclosure Statement 180.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	45,608	Telephone	(202) 371-2600
Name (Print/Type)	Jeffrey S. Weaver			Date	January 10, 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:
RAWLINS *et al.*
Appl. No.: 09/986,764
Filed: November 9, 2001
For: **Method and Apparatus for
Reducing DC Offsets in a
Communication System**

Confirmation No.: 5623
Art Unit: 2631
Examiner: Vo, Don Nguyen
Atty. Docket: 1744.1330000

Fourth Supplemental Information Disclosure Statement

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Fourth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Third Supplemental Information Disclosure Statement filed on August 11, 2004 in connection with the above-captioned application.

Applicants have listed publication dates on the attached Form PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Document AD56 was cited in an Office Action in related U.S. Patent Application No. 09/476,093, filed January 3, 2000, entitled "Communication System Method With Multi-Mode and Multi-Band Functionality and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,937,013 and 5,790,587, which have already been cited in the present application.

Documents AE56 and AF56 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/525,615, filed March 14, 2000, entitled "Method, System, and Apparatus for Balanced Frequency Up-conversion of a Baseband Signal and 4-Phase Receiver and Transceiver Embodiments," directed to related subject matter. Also cited in said Notice of Allowance were U.S. Patent Nos. 6,091,940; 6,370,371; 6,694,128; and 6,704,549, which have already been cited in the present application.

Documents AG56-AI56 were cited in an Written Opinion in related PCT Application No. PCT/US03/16403, filed May 27, 2003, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter. Also cited in said Written Opinion was U.S. Patent No. 5,483,600, which has already been cited in the present application.

Documents AG56-AI56 and AA57-AF57 were cited in an Office Action in related U.S. Patent Application No. 10/290,323, filed November 8, 2002, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 5,483,600, which has already been cited in the present application.

Documents AG57-AI57 were cited in an Office Action in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,937,013; 6,014,551; 6,073,001; 6,085,073; and 6,314,279, which have already been cited in the present application.

Documents AA58 and AP59 were cited in an Office Action in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter. Also cited in said Office Action were U.S. Patent No. 6,608,647, Dines, J.A.B., "Smart Pixel Optoelectronic Receiver Based on a Charge Sensitive Amplifier Design," *IEEE Journal of Selected Topics in Quantum Electronics*, IEEE, Vol. 2, No. 1, pp. 117-120 (April 1996); Simoni, A. *et al.*, "A Digital Camera for Machine Vision," *20th International Conference on Industrial Electronics, Control and Instrumentation*, IEEE, pp. 879-883 (September 1994); and Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," *Electronics & Communication Engineering Journal*, IEEE, pp. 37-47 (February 1998), which have already been cited in the present application.

Documents AB58-AE58 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/987,193, filed November 13, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Document AF58 was cited in an Office Action in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled " Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter.

Documents AG58 and AH58 are co-owned patents which are directed to related subject matter.

Documents AI58 and AA59 were cited in an Office Action in related U.S. Patent Application No. 10/289,377, filed November 7, 2002, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing of a first Office Action on the merits. No statement or fee is required.
- 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final

Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.

- a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- c. Attached is our PTO-2038 Credit Card Payment Form in the amount of \$180.00 in payment of the fee under 37 C.F.R. § 1.17(p).

4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$_____ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:

- a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
- b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was

known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).

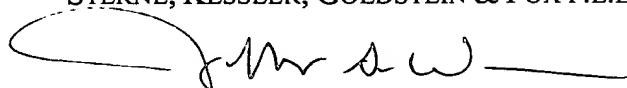
- 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- 6. A concise explanation of the relevance of the non-English language documents appears below:
- 7. A copy of document AP59 is enclosed. However, in accordance with 37 C.F.R. § 1.98(a)(2), copies of the U.S. patents and patent application publications cited on the attached Form PTO-1449 are not enclosed.
- 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. _____, filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).
- 9. It is expected that the examiner will review the prosecution and cited art in the parent application no. _____, in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution histories have been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Jeffrey S. Weaver
Attorney for Applicants
Registration No. 45,608

Date: 1-10-05

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600

348470_1.DOC



FORM PTO-1449 FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		ATTY. DOCKET NO. 1744.1330000	APPLICATION NO. 09/986,764
		INVENTORS RAWLINS <i>et al.</i>	FILING DATE November 9, 2001

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA						
	AB						
	AC						
	AD56	4,132,952	01/1979	Hongu <i>et al.</i>			
	AE56	5,260,973	11/1993	Watanabe			
	AF56	6,307,894 B2	10/2001	Eidson <i>et al.</i>			
	AG56	6,091,289	07/2000	Song <i>et al.</i>			
	AH56	6,437,639 B1	08/2002	Nguyen <i>et al.</i>			
	AI56	2002/0037706 A1	03/2002	Ichihara			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP	59	Deboo, Gordon J., <i>Integrated Circuits and Semiconductor Devices</i> , 2 nd Edition, McGraw-Hill, Inc., pp. 41-45 (1977).
	AQ		
	AR		

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449 FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		ATTY. DOCKET NO. 1744.1330000	APPLICATION NO. 09/986,764
		INVENTORS RAWLINS <i>et al.</i>	
		FILING DATE November 9, 2001	ART UNIT 2631

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA57	4,441,080	04/1984	Saari			
	AB57	4,873,492	10/1989	Myer			
	AC57	5,697,074	12/1997	Makikallio <i>et al.</i>			
	AD57	5,784,689	07/1998	Kobayashi			
	AE57	6,335,656 B1	01/2002	Goldfarb <i>et al.</i>			
	AF57	6,690,232 B2	02/2004	Ueno <i>et al.</i>			
	AG57	5,636,140	06/1997	Lee <i>et al.</i>			
	AH57	6,366,622 B1	04/2002	Brown <i>et al.</i>			
	AI57	6,600,795 B1	07/2003	Ohta <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449 FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		ATTY. DOCKET NO. 1744.1330000	APPLICATION NO. 09/986,764
		INVENTORS RAWLINS <i>et al.</i>	
		FILING DATE November 9, 2001	ART UNIT 2631

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA58	6,064,054	05/2000	Waczynski <i>et al.</i>			
	AB58	5,218,562	06/1993	Basehore <i>et al.</i>			
	AC58	5,239,496	08/1993	Vancraeynest			
	AD58	5,896,304	04/1999	Tiemann <i>et al.</i>			
	AE58	6,005,903	12/1999	Mendelovicz			
	AF58	5,834,979	11/1998	Yatsuka			
	AG58	6,798,351 B1	09/2004	Sorrells <i>et al.</i>			
	AH58	6,813,485 B2	11/2004	Sorrells <i>et al.</i>			
	AI58	5,410,270	04/1995	Rybicki <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER	DATE CONSIDERED
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.	



FORM PTO-1449 FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT		ATTY. DOCKET NO. 1744.1330000	APPLICATION NO. 09/986,764
		INVENTORS RAWLINS <i>et al.</i>	
		FILING DATE November 9, 2001	ART UNIT 2631
		U.S. PATENT DOCUMENTS	

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
AA59	6,509,777 B2	01/2003	Razavi <i>et al.</i>			
AB						
AC						
AD						
AE						
AF						
AG						
AH						
AI						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
AJ						Yes No
AK						Yes No
AL						Yes No
AM						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AN		
AO		
AP		
AQ		
AR		

EXAMINER _____ **DATE CONSIDERED** _____

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.